

Manual Assembly Project

Subject/Course: Technical Drafting

Grade (s): 9-12 Designer (s)

Stage 1: Desired Results

Core Standard(s):

Integrate various drawings to create a detailed assembly

Understandings: Students will understand that....

The main purpose of drafting is to create plans for production.

Which views are essential in the designing process

Essential Question(s):

How do I make it look like one part connects to another?

What views do I need to input?

Where do I put dimensions?

Students will know....

Student will be able to

The alphabet of lines

How to use and understand line weights

Dimensioning techniques

Develop plans that could be used as blueprints for a project.

Stage 2: Assessment Evidence

What evidence will show that students understand?

x	Performance Task	x	Project	Quizzes
	Tests		Informal Observations	x Discussions
	Interviews	x	Self-Assessment	Other

Goal – produce a drawing to put in product manual, which shows how the project is put together

Role – you are the drafter for cabinet company

Audience – people who will buy the disassembled cabinet from the store

Situation - your are creating the plans to put into a brochure which is included in the product Manual.

Product performance - to take existing plans and put them into simple, easy to follow, step by step guide for assembly

Standard for success - Your plans should:

- Give easy to follow instructions with detailed drawings
- Have proper drafting techniques used in design and dimensioning.

Stage 3: Learning Plan

Motivation – Introduce and Explain

How will you help students know *where* they are headed and why? How will you *hook* students through engaging and thought-provoking experiences that point toward big ideas, essential questions, and performance tasks?

Students need to understand the building process starts through good assembly plans. They get to combine different drawings practices, and integrate them into a final manual, which will be read by people with no drafting experience.

A good starting question would be: if you were to put this cabinet together, what would be the first thing you would do?

Model (Teacher presentation):

What instruction is needed to *equip* students for final performance?

Demonstrate product manuals that exist. Point out pros and cons of each.

They need to decide which types of drawings work best in each situation. Orthographic, or isometric?

Guided and Independent Practice (Student Engagement):

What events can students *experience* to make the ideas and issues real? What learning activities will help student *explore* the big ideas and essential questions?

Review product manuals and critique them.

Tour a shop and view the drawings that are being used for each process.

Bring in a speaker who has experience in drafting or production. Have them explain how crucial

Assembly drawings are.

Reflection/Assessment:

How will you cause students to *reflect* and *rethink* to dig deeper into core ideas? How will you guide students in *rehearsing*, *revising*, and *refining* their work based on feedback and self-assessment? How will students *exhibit* their understanding about their final performances and products? How will you guide them in *self-evaluation* to identify the strengths and weaknesses in their work and set future goals?

Have them explain to the teacher at the end of the class, how the process is going, and what the next Step is.

The students can take the drawings to a class that actually builds projects. Have the class build the product, or review the plans to see if they are usable.

Have them list ways they could have improved the drawings, if they were to do it again.